CWEMF Workshop
CALIFORNIA WATER PLAN UPDATE 2018

Wednesday, June 18, 2017
9:00 a.m. Registration
9:30 a.m. Start, Adjourn 3:15 p.m.

Stantec
3301 C Street Suite 1900
Sacramento, CA 95816

WORKBOOK

Name: _____ Organization _____

Agenda Item #1

Please Sign-in and Pick Up Meeting Materials

Agenda Item #2

CWEMF – Water Plan Joint Workshop

CALIFORNIA WATER PLAN UPDATE 2018

June 28, 2017

3301 C Street, Suite 1900, Sacramento, CA (Stantec)

9:00 a.m. Registration, 9:30 a.m. Start, Adjourn 3:15 p.m.

Meeting Objectives

• Outline the full planning context and planning logic of Water Plan Update 2018 • Receive assessment of the listed metrics and data sources	• Validate the General Indicator Framework • Receive suggestions for improved data sets, locations and methods to obtain

Facilitation Plan

#	TIME	CONTENT	PRESENTERS
1.	9:00	**Registration**	Team
2.	9:30	**Welcome & Overview, Introductions** 1. Welcome Comment, Logistics 2. Agenda and Meeting Goals 3. Introductions 4. Opening Remarks: Water Plan Update 2018 – Relevant Today and Tomorrow 5. Water Plan Brochure	**Lew Moeller,** and **Tom Filler,** CA Department of Water Resources (DWR) **Shyamal Chowdhury**, CWEMF **Lisa Beutler,** Facilitator, Stantec
3.	10:00	**CWP Context: Context for CWEMF Focus and Workshop**	**Abdul Khan**, DWR
4.	10:15	**Sustainability Indicators Framework**: Overview of screened categories for indicators	**Tom Filler**
5.	10:40	**Public Health and Safety**: Overview *Discussion*	**Jose Alarcon**, DWR
6.	11:40	**Lunch**	All
7.	12:20	**Ecosystem Vitality**: Overview *Discussion*	**Ted Frink**, DWR All
8.	1:25	**Break**	All
9.	1:40	**Healthy Economy**: Overview *Discussion*	**Megan Fidell**, DWR All
10.	2:20	**Opportunities for Enriching Experiences**: *Discussion*	**Emily Alejandrino**, DWR All
11.	3:00	**Wrap-Up**	Team
12.	3:05	**Closing Comments**	All
13.	3:10	**Session Evaluation**	**Shyamal Chowdhury**
14.	3:15	**ADJOURN**	

Agenda Item # 2

Water Plan Update 2018 – Relevant Today and Tomorrow

- **Sustainability** — California's water resources must be managed for a variety of societal values, and in a manner that does not jeopardize future generation's ability to survive and thrive.
- **Infrastructure** — There is a renewed focus on investment in rehabilitation and modernization of aging and deficient water- and flood related infrastructure.
- **Governance and Alignment** — Alignment of governance at the appropriate scale is critical for achieving sustainable water resources management.
- **Regulatory** — Regulations should be tied to watershed management efforts, including planning and investment, to enhance ecosystem function and viability.
- **Capacity Building** — There is a need for greater leadership and assistance to enhance capacity for water resources management at a regional scale, such as the river basin or the groundwater basin.
- **Funding** — New and innovative funding sources must be developed for capital projects, but also for ongoing funding needs, such as planning, operations and maintenance of the existing system, and support for regional water management.

Agenda Item #2

CWP Update 2018 Overview

Chapter 1	Chapter 2	Chapter 3	Chapter 4	Chapter 5
Envisioning Sustainable Water Resources Management	**Sustainability Outlook**	**Recommended Actions to Support Long-Term Sustainability**	**Funding Plan**	**Implementation Plan**
• Establishes a sustainability vision and develops shared intent around sustainable water resources management. • Defines sustainability around four societal values: "Sustainability is an ongoing, resilient, and dynamic balance among societal values: public health and safety, healthy economy, ecosystem vitality, and opportunities for enriching experiences." • Describes water management activities that support societal values through defined intended outcomes. • Describes DWR & State Government's role and commitment.	• Summarizes water resources management assessments with an emphasis on sustainability. • Evaluates water management effectiveness and identifies gaps and needed work. • Uses specific indicators. • Discusses methods for tracking and reporting progress. • As part of assessment, describes challenges and potential disrupters for sustainably managing water in California.	• Focuses on statewide behaviors and enabling conditions that supports sustainable management & and realizes resource and societal benefits. • Recommends long-term strategies and short-term actions to address urgent gaps and needs. • Enables necessary enabling conditions and behaviors that set the foundation for sustainable water resources management. • Recommended actions will include an estimate of the cost and time to implement (which will inform the Implementation Plan)	• Assesses, identifies, and recommend State funding/ revenue sources for water management activities identified in Chapter 3.	• Presents a recommended schedule of implementation, based on identified actions (Chapter 3) costs and time needed to implement identified funding mechanisms (Chapter 4). • Includes progress-tracking methods and identify potential roles and responsibilities for successful implementation.

Agenda Item #3

About Chapter 2 Sustainability Outlook

Challenges exist in all areas of water management. Goals of CWP Update 2018 are to:

- Set policy-level priorities
- Focus energy and resources
- Strengthen operations
- Ensure that water managers are working toward common goals
- Establish agreement around intended water management outcomes
- Assess and adjust direction in response to a changing environment

These CWP efforts provide support (or a foundation) for the broader work that needs to be done for CA water management in the long-term.

The initial investigation for Sustainability Indicators is based on common four Societal Values:

The Societal Values can be seen as an expansion of ideas sometimes described as "triple bottom line" (Environment, Economy, and Equity) or the "three-legged stool" that are common in discussions of sustainability. The values are enduring throughout time.

The Water Plan outlines some potential Intended Outcomes that reflect the management objectives water managers believe serve the Societal Values. The Intended Outcomes are presented as long-term; however, what constitutes a desired outcome can change over time. For example, the understanding of an outcome that might advance ecosystem vitality could continue to evolve as the understanding of dynamic systems grows. The outcomes are also dynamically balanced so that the acts leading to achieving one outcome do not suboptimize the efforts of achieving a different desired outcome.

Agenda Item #3 (Continued)

The Water Plan will then utilize Sustainability Indicators and Metrics that identify things that be observed or measured to determine the degree to which a desired outcome has been achieved.

Potential Data Sources lists some of the information that might be available to describe the status of the indicators and metrics.

The specific goal of Chapter 2 is to: Evaluate water management effectiveness and identify gaps and work that needs to be done by using specific indicators to measure water management sustainability with respect to the 4 societal values.

Process to Develop Initial Sustainability Indicators

1. Developed a compilation of desired outcomes, indicators and metrics using existing information, such as:
   - 2013 Water Plan
   - 2014/16 Water Action Plan
   - Flood Future Report
   - Central Valley Flood Protection Plan
   - SGMA Strategic Plan
   - IRWM Stakeholder Perspectives
   - State Companion Plans
   - Disadvantaged Community Visioning Workshop
   - Input from previous Water Plan and CWEMF meetings
   - Best professional judgement from multiple subject matter experts
2. Organized information into categories tied to societal values.
3. Evaluated the accessibility, quality and quantity of data to support proposed measurements.
4. Conducted an informal assessment by subject matter experts to establish the utility of the framework and creating a starting point for a conceptual reporting tool.

Limitations

1. Statewide Scale (high-level)
2. Provides a general proof of concept rather than definitive analysis
3. Data adequacy (time to acquire and data quality and quantity)
4. Identified outcomes may achieve multiple societal goals; however, for ease of initial analysis they categorized by singular values.
5. Other

Agenda #4

Water sustainability is an ongoing, resilient, and dynamic balance among societal values:

Societal Value	Intended Outcome
Public Health and Safety	An adequate water supply for domestic needs, sanitation, and fire suppression
	Reduce number of people exposed to waterborne health threats such as contaminants or infectious agents
	Reduced loss of life, injuries and health risks caused from extreme hydrologic conditions, catastrophic events and/or system failures (including infrastructure)

Example:

Societal Value	Intended Outcome	ONE Potential Sustainability Indicator	Potential Data Source
Public Health & Safety	An adequate water supply for domestic needs, sanitation, and fire suppression	Population and percentage of population without access to adequate sanitation	SWRCB

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Public Health and Safety	An adequate water supply for domestic needs, sanitation, and fire suppression	Number and percentage of communities without adequate domestic water supplies		SWRCB – DDW (Permits, Inspection, Compliance, Monitoring and Enforcement system)	
		Population and percentage of population without access to adequate sanitation			
		Metric related to fire suppression	CalFire's California Forest Improvement Program (e.g. small water infrastructure damaged due to fire).	US EPA; CalFire; SWRCB (has data on drinking water plants that receive emergency money for water infrastructure damage from fire)	
			CalFire developed similar indicators and metrics for assessment of forests	CalFire (Fire and Resource Assessment Program (2015))	
			Quantity of fuel; USEPA data (in lieu of forest management plans?)	Is there a CalFire database with damages (acreage, property, population, etc.)?	
		Number of dry wells			
		Number of water bottles distributed		Cal OES, SWRCB, others	
		Number of private wells			
	Reduce number of people exposed to waterborne health threats such as contaminants or infectious agents	Number of public water systems not in compliance with drinking water standards		SWRCB, US EPA	
		Number of communities that rely on contaminated groundwater for water supply	Use number of communities with census data to extrapolate out to population.	SWRCB-DDW	
		Contact exposure to algae; mercury levels in fish			
		Number of water bodies on the EPA impaired water bodies list. Number of water bodies that have more than 5 TMDLs (total maximum daily load)		Cal EPA	

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Public Health and Safety	Reduced loss of life, injuries and health risks caused from extreme hydrologic conditions, catastrophic events and/or system failures (including infrastructure)	Number of communities that do not have hazard mitigation plans, county emergency operations plans, emergency response plans, and/or evacuation plans in place		Cal OES; DWR; US Bureau of Reclamation	
		Number of communities that do not have drought preparedness plans or in the future water shortage contingency plans.	Potentially replace with Number of communities that have drinking water emergency plans	DWR, SWRCB - DDW	
		Number of days per year that CVP and SWP facilities are out of service	Potentially change to number of days per year with facility failures that affect more than 5% of water allocations for the CVP or SWP (example: failed river valve several years ago at Oroville)	SWP annual report; CVP equivalent?	
		Number of urban areas without state-mandated urban level of flood protection	Weight based on population		
		Population within floodplains (with equal to or greater than a 1% chance of flooding in any given year)			
		Number of small systems on fractured rock groundwater sources			

Discussion:

1. What are your general impressions of the adequacy of the indicators and metrics identified relative to the desired outcomes?
2. What are your thoughts on the sources and adequacy of the potential data sources currently identified for the indicators and metrics?
3. What, if any, recommendations do you have related to available data to support the indicators and metrics?

For data recommendations:

4. How would you rate the quality of the data?
5. Relative to its proposed use, what data gaps do you see?
6. If the data is not publicly available, what are the best steps to acquire the data?

Other:

7. If only a few indicators could be analyzed, what would you prioritize?

Initial Investigation for Sustainability Indicator	
Societal Value	Intended Outcome
Ecosystem Vitality	Maintained and increased ecosystem and native species distributions in California while sustaining and enhancing species abundance and richness
	Maintained and improved ecological conditions vital for sustaining ecosystems in California
	Maintained and improved ecosystem functions and processes vital for sustaining ecosystems in California

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Ecosystem Vitality	Maintained and increased ecosystem and native species distributions in California while sustaining and enhancing species abundance and richness	Native fish conservation and status index		UC Davis (PISCES database[1])	
	Maintained and improved ecological conditions vital for sustaining ecosystems in California	Degree of aquatic fragmentation[2]		UC Davis (Water Sustainability Indicators Framework[3])	
		Water temperature, chemistry, and pollutant / nutrient concentrations and dynamics		CDFW	
		Water quantity and availability		CDFW	
		Number of fish rescues and fisheries closed to recreational and commercial activity		DFW Fish and Game Commission	
	Maintained and improved ecosystem functions and processes vital for sustaining ecosystems in California	California Stream Condition Index[4]		UC Davis (Water Sustainability Indicators Framework[3]); SWRCB	
		California Integrated Assessment of Watershed Health[5]		US EPA	

[1]PISCES is a software and a database containing information of fish species distribution in California historically, and in the present, according to primary source data, models, and leading experts.

[2]Aquatic fragmentation is when streams are crossed by roads or dams, the portions above and below the potential barrier are separated from each other in a process called fragmentation. This can interfere with physical processes and movement of aquatic organisms.

[3]Water Sustainability Indicators Framework was developed as part of the California Water Plan Update 2013 to bring together sustainability indicators related to the water system and their relationship to ecosystems, social systems, and economic systems.

[4]California Stream Condition Index is a biological index used to score the condition of benthic macroinvertebrates communities in perennial wadeable rivers and streams. The index includes observed to expected index and a multimetric index.

[5]California Integrated Assessment of Watershed Health is an assessment to identify healthy watersheds and characterize relative watershed health across the state to guide future protection initiatives.

Discussion:

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Other:

7. If only a few indicators could be analyzed, what would you prioritize?

Initial Investigation for Sustainability Indicator	
Societal Value	Intended Outcome
Healthy Economy	Reliable water supplies of suitable quality for a variety of productive uses, and productive water uses are based on a reliable supply
	Consideration of economic risks and rewards on floodplains, rivers, and coastal areas
	More benefits from economics activities, including from reduced costs to provide a given level of service (including transaction costs)
	Reduced likelihood or occurrence of significant social disruption following a disaster (excludes drought)

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Healthy Economy	Reliable water supplies of suitable quality for a variety of productive uses, and productive water uses are based on a reliable supply	Delivery reliability for SWP and CVP	Compare annual allocations promised vs. delivered allocations	DWR; US Bureau of Reclamation; SWRCB; California Energy Commission	
		Changes in water use (agricultural, urban, industrial, environmental etc.)	Trends in water use on a statewide scale		
		% of communities showing a neutral (or excess) water balance in their approved urban water management plan and/or agricultural water management plan	Potentially change to number of communities showing they have 30% reserve in UWMPs/AWMPs		
		Real cost of water to end user (e.g., greenhouse gas production and energy consumption relative to water production)			
		Compare gallons per capita per day in each county to national average			
		Drought carryover storage in reservoirs			
		Distribution system leaks		SWRCB	
		Number of groundwater basins with stable or recovering groundwater levels	Local, county, and government information on groundwater public health and safety. How does land use management and water management affect groundwater basins and sub-basisn	DWR – SGMA, others	
		Groundwater levels and water quality		SWRCB; DWR	
		Water available for recharge, groundwater recharge maps needed		DWR –WAFR (water available for replenishment)	
		Change in groundwater storage		DWR – SGMA	
		Local Groundwater Management Plans/Groundwater Sustainability Plans in and out of compliance with SGMA		DWR – SGMA	

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Healthy Economy	Consideration of economic risks and rewards on floodplains, rivers, and coastal areas	Acreage of new lands developed within floodplains; along river corridors; and in coastal areas at risk of sea level rise		State Land Commission, Coastal Commission	
		Number of sea-level rise preparedness assessments completed per Assembly Bill 691	Consider tracking miles of coastline covered as well as how far inland each goes. Could possibly do something similar for rivers.		
		Acres of riparian habitat			
		Acres of connected floodplain habitat			
		Improvements to flood safety (reduced flood insurance rates/home value changes/avoided recovery and clean-up costs)		US Census Bureau (Housing), FEMA, Emergency Services agencies	
	More benefits from economics activities, including from reduced costs to provide a given level of service (including transaction costs)	Public and legislative support for water measures		Legislative Analyst's Office; US Bureau of Economic Analysis, SWRCB, PUC	
		Domestic water rates. Compare water rates to the national average water rates and compare water rates against household income			
		Compare gross domestic product to gallons per capita per day			
		Suggestion to add 'Number of state facilities that are beyond design life'			
		Suggestion to add 'Book value of assets in water infrastructure and replacement costs'		US Bureau of Reclamation (CVP), local municipals	
		Suggestion to add 'FERC licenses and number of renewals (50 year licenses)'		FERC	
		Land use change – agriculture/urban/industrial		USGS	
		Water Transfers (water moving to higher valued uses)		DWR, water agencies	
		Social safety (water used for industry instead of ag.)		Food price changes (Consumer Price Index)	
		[Gross domestic product] / [consumptive use]		DWR, WUE index (DWR has urban; not sure about agriculture)	

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Healthy Economy	More benefits from economics activities, including from reduced costs to provide a given level of service (including transaction costs)	Consumer Price Index vs aggregated cost of service (all agencies)	Likely have for urban but agriculture is questionable		
		Change in end use (agriculture, municipal, industrial), mapped.			
		5-yr rolling average of hydropower generation vs total generated			
	Reduced likelihood or occurrence of significant social disruption following a disaster (excludes drought)	Value of assets within floodplains (with equal to or greater than a 1% chance of flooding in any given year)		DWR; US Census Bureau; FEMA; Cal OES	
		Number (cumulative) of water-related emergency declarations over time	Suggestion to replace with 'Emergency funds Cal OES paid out to declared disasters'		
		Lost business income from emergency declarations	Maybe difficult to quantify (e.g. Oroville)		

Discussion:

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Other:

7. If only a few indicators could be analyzed, what would you prioritize?

Initial Investigation for Sustainability Indicator	
Societal Value	Intended Outcome
Opportunities for Enriching Experiences	Preserved or enhanced culturally or historically significant sites and communities, including continued and enhanced access to water and land used for sacred ceremonies or practices
	Preserved and increased natural areas with aesthetic or intrinsic value
	Continued and enhanced access to resources that support education and learning
	Continued or enhanced recreational opportunities in waterways, reservoirs, or natural and open spaces

Initial Investigation for Sustainability Indicator					
Societal Values	Intended Outcome	Identified Sustainability Indicators and Metrics	Individual Suggestions/Input/Feedback/Edits	Potential Data Sources	Notes:
Opportunities for Enriching Experiences	Preserved or enhanced culturally or historically significant sites and communities, including continued and enhanced access to water and land used for sacred ceremonies or practices	Number of Native American tribal communities without access to adequate, safe water supplies		US EPA; Indian Health Services Sanitation Deficiency Construction Program; (State Parks) California office of Historic Preservation	
		Number of qualified historical buildings or historic places at risk of losing reliable water supply, or with equal to or greater than, a 1% chance of being flooded in any given year			
	Preserved and increased natural areas with aesthetic or intrinsic value	Statewide open space (acreage)		State Lands Commission; California Coastal Commission; California Department of Conservation	
		Conserved lands adjacent to California waterways (acreage)	Include state, federal and county lands in conservation		
		Land Conservation (Williamson) Act Enrollment (acreage)	Consider adding other land conservation measures, including county level (grazing and crop lands). Can include mitigation and enhancement lands in acreage set aside for conservation.	California Department of Conservation, DWR	
	Continued and enhanced access to resources that support education and learning	Number of school districts using water and environmental curriculum in K through 12 programs	Do people understand where their water comes from?	California Department of Education	
		Number of students enrolled in water and environmental resources management programs within the UC and CSU systems	Consider replacing with number of local water agencies that have education for customers, children and adults programs, visitor center and demo tables. Number of teachers that use DWR water education templates/water curriculum – Project WET.	Water Education Foundation POWER educational resources	
	Continued or enhanced recreational opportunities in waterways, reservoirs, or natural and open spaces	Visitor user days at water-related state parks (rivers, coastal, water bodies)		California Department of Parks and Recreation	
		Number of communities without access to water-related State lands, parks, or resources		California Department of Parks and Recreation	

Discussion:

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Other:

7. If only a few indicators could be analyzed, what would you prioritize?

Agenda #10

WRAP UP & NEXT STEPS

Upcoming Meetings and Milestones:

- July 19 – Workshop on Sustainable Funding (Chapter 4), Bonderson Bld., Sacramento (9th & O) Hearing Room
- July 25 – Workshop on Sustainability Indicators (Chapter 2), Bonderson Bld., Sacramento (9th & O) Hearing Room
- August 23 – Public AC Meeting, Health Services Training Center, Sacramento
- September 27 – Plenary Meeting, McClellan Business Park, Wildland Fire Conference Center
- Public Review Draft Release Date: February 2018